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GB/T 46920-2025

Professional digital trunking communication systems based on 12.5 kHz TDMA channels - Technical requirements for security

基于12.5kHz信道的时分多址（TDMA）专用数字集群通信系统 安全技术要求

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Standardization Administration of the PRC

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document is one of a series of standards for dedicated digital trunking communication systems based on a 12.5kHz channel for Time Division Multiple Access (TDMA). The standards have been published as follows:

---GB/T 46923 General Technical Specifications for Dedicated Digital Trunking Communication Systems Based on 12.5kHz Channel Time Division Multiple Access (TDMA) beg";

---GB/T 34991 Air Interface Material for Dedicated Digital Trunking Communication Systems Based on 12.5kHz Channel for Time Division Multiple Access (TDMA) "Technical Specifications for Data Link Layer and Data Layer";

---GB/T 34992 Air Interface Call for a Dedicated Digital Trunking Communication System Based on a 12.5kHz Channel for Time Division Multiple Access (TDMA) Called the "Control Layer Technical Specification";

---GB/T 46920 Security Technical Requirements for Dedicated Digital Trunking Communication Systems Based on Time Division Multiple Access (TDMA) Channels (12.5kHz) beg";

---GB/T 46919 Mobile Station Technology for Time Division Multiple Access (TDMA) Dedicated Digital Trunking Communication Systems Based on 12.5kHz Channel specification";

---GB/T 46922 Interconnection Technology for Dedicated Digital Trunking Communication Systems Based on 12.5kHz Channel Time Division Multiple Access (TDMA) Technical Specifications;

---GB/T 46921 Compatibility of Time Division Multiple Access (TDMA) Dedicated Digital Trunking Communication Systems Based on 12.5kHz Channels test". Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document is under the jurisdiction of the National Telecommunications Standardization Technical Committee (SAC/TC485). This document was drafted by the Science and Technology Information Bureau of the Ministry of Public Security and the First Research Institute of the Ministry of Public Security. The main drafters of this document are. Zhu Zhenrong, Yuan Yifang, Fan Zhai, Zhang Ying, Zhang Feng, Shi Shengwei, Jiang Qingsheng, Fu Dongsheng, Liu Wenjing, and Wang Weimin. Song Zhensu, Pan Jining, Cao Hui, Sun Huiyang, Shi Hao, Xu Guisen, Sun Bingbing. Time Division Multiple Access (TDMA) based on a 12.5kHz channel Security Technical Requirements for Dedicated Digital Trunking Communication Systems

1 Scope

GB/T 46920-2025 is the Chinese national standard covering the security of a public safety radio network - the authentication of a radio to the system, the air interface and end-to-end encryption, the key management across thousands of handsets and the stun and kill of a radio that has been lost or stolen. First edition, 20,000 words, the fifth of the TDMA family. It was issued on 31 December 2025 and has been in force since 1 April 2026, as a first edition. The document is under the responsibility of the Ministry of Industry and Information Technology. This page is published from the official record of the 2025 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the security measures for use in dedicated digital trunking communication systems based on a 12.5kHz channel for Time Division Multiple Access (TDMA). This requirement includes technical requirements for two-way authentication, air interface security, and end-to-end security. This document applies to the security encryption functions of a dedicated digital trunking communication system based on a 12.5kHz channel for Time Division Multiple Access (TDMA). Design and development.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 34991 Air Interface Physical Layer of Dedicated Digital Trunking Communication System Based on Time Division Multiple Access (TDMA) Channel (12.5kHz) and data link layer technical specifications

GB/T 34992 Air Interface Call Control for Dedicated Digital Trunking Communication System Based on 12.5kHz Channel Time Division Multiple Access (TDMA) Layering Technical Specifications

GB/T 46923 General Technical Requirements for Dedicated Digital Trunking Communication Systems Based on Time Division Multiple Access (TDMA) Channels (12.5kHz)

3 Terms, Definitions and Abbreviations

3.1 Terms and Definitions The terms and definitions defined in GB/T 46923, GB/T 34991 and

GB/T 34992, as well as the following terms and definitions, apply to this document.

3.1.1 Authentication The process of verifying the legitimacy of the identities of the participants in a communication.

3.1.2 stun The process of temporarily disabling a mobile station using air interface signaling.

3.1.3 Revive The process of using air communication to deactivate a remotely stunned mobile station.

3.1.4 remotely killed The process of permanently disabling a mobile station using air interface signaling means that the mobile station cannot be unblocked via air interface signaling.